

### **REMARKS/ARGUMENTS**

The Office Action of February 10, 2009 has been carefully reviewed. Claims 1, 3-11, 13-24, 26-34, 36-44 and 46, 47, 54, and 56-61 are pending in the application and remain rejected.

#### **Examiner's Interview**

Applicant appreciates the Examiner granting a phone interview on May 19, 2009 for this application to discuss possible amendments. Per the Examiner's suggestion, Applicant has amended the claims to clarify the limitations based on language from the specification.

#### **Claim Rejections – 35U.S.C. § 103**

Claims 1, 3-11, 13-17, 20-24, 26-34, 36-44, 46, 47, 54 and 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zufryden, A Dynamic Programming Approach for Product Selection and Supermarket Shelf-Space Allocation (1986) in view of Bean et al., A Hybrid Algorithm for the Multiple Choice Knapsack Problem (1990) and further in view of Pisinger, A Minimal Algorithm for the Multiple-Choice Knapsack Problem (1994). Applicant traverses these rejections.

Applicant has amended independent Claims 1, 11, 24, 34 and 44 to include subject matter described but not claimed in the present application. Specifically, these claims are amended to recite the feature of using a solution vector (see *inter alia*, paragraphs [89] and [102-103] of the published specification) and a recursive function that rewrites values in the solution vector (see *inter alia*, paragraphs [87-89]), by recursively running for allocations from 0 up to a predetermined maximum allocation for each class (see *inter alia*, paragraphs [121-126] regarding loop unrolling, and paragraphs [70-72] regarding  $f(d)$  being allocations (capacity) for a class), wherein the recursive function evaluates possible allocations for each class in a sequentially increasing order to improve local caching performance (see *inter alia*, paragraph

[126]). Finally, the allocation values in the solution vector that maximize profit are selected (see paragraphs [74] and [131]).

In the Office Action on page 6 the Examiner notes that Pisinger teaches formulating a Multiple Choice Knapsack Problem utilizing recursive functions to rewrite values into a solution vector. Applicant notes that Pisinger does not teach or suggest running the recursive function in a manner that improves local memory caching. This claimed feature of improving memory caching results in better look-up in values during the running of the recursive algorithm, thereby improving performance (see the specification, paragraphs [123] and [126]). While caching to improve performance is known in the art, re-ordering specific processing of a Multiple Choice Knapsack problem to perform calculations in an order that results in improved caching is not. Applicant asserts that this process is new and inventive, and that none of the cited prior art references, either alone or combined, teach or suggest this feature.

Accordingly, Applicant asserts that Claims 1, 11, 24, 34 and 44 and all claims that depend upon them are allowable.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zufryden, A Dynamic Programming Approach for Product Selection and Supermarket Shelf-Space Allocation (1986) in view of Bean et al., A Hybrid Algorithm for the Multiple Choice Knapsack Problem (1990) and further in view of Pisinger, A Minimal Algorithm for the Multiple-Choice Knapsack Problem (1994) as applied to claims 16 above, and further in view of Johnson, Resource Allocation Models for Retail Planning and Display Space Allocation, and Optimal Allocation of Catalog Advertising Space (1982). Applicant traverses these rejections. These claims depend from allowable parent claims, and are therefore allowable.

**CONCLUSION**

All rejections having been addressed, Applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. Applicant reserves all rights to pursue claims of the same or similar scope to the original and/or cancelled claims in this application, e.g., by filing a continuing application. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the number set forth below.

Respectfully submitted,

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By: Charles L. Miller/  
Charles L. Miller  
Registration No. 43,805  
BANNER & WITCOFF, LTD.  
10 South Wacker Drive,  
Suite 3000  
Chicago, IL 60606  
Telephone: 312-463-5000  
Facsimile: 312-463-5001